

Title (en)
Computer system with interrupt controller and power management unit

Title (de)
Rechnersystem mit Interruptsteuerung und Leistungsverwaltungseinheit

Title (fr)
Système ordinateur avec contrôleur d'interruption et unité de gestion de puissance

Publication
EP 0645690 B1 20030115 (EN)

Application
EP 94305471 A 19940725

Priority
US 12533693 A 19930922

Abstract (en)
[origin: US5765003A] An interrupt controller includes an interrupt request register for receiving interrupt requests from various peripherals or I/O devices via a set of request lines. A priority resolver is further provided for comparing the priority level of the interrupt lines, latching the lower priority requests in a stand-by mode, and directing servicing of the highest priority level. An in-service register is provided for storing the identification of any request line that is being serviced by the microprocessor. In one embodiment, a set of signal lines are coupled between the in-service register and external terminals of the integrated circuit on which the interrupt controller is fabricated. A power management unit may be coupled to the external pins of the integrated circuit and thereby receives real-time information regarding an interrupt request that is currently being serviced and regarding interrupt service routines that have completed. Using this information, the power management unit advantageously stops unused clock signals and/or removes power from inactive circuit portions when an interrupt routine completes without having to estimate the time of completion. By accurately stopping unused clock signals and removing power, a reduction in the overall power consumption of the computer system can be attained.

IPC 1-7
G06F 1/32; **G06F 13/24**

IPC 8 full level
G06F 1/04 (2006.01); **G06F 1/32** (2006.01); **G06F 9/48** (2006.01); **G06F 13/24** (2006.01); **G06F 13/26** (2006.01)

CPC (source: EP US)
G06F 1/3215 (2013.01 - EP US); **G06F 1/3237** (2013.01 - EP US); **G06F 1/325** (2013.01 - EP US); **G06F 1/3287** (2013.01 - EP US); **G06F 13/24** (2013.01 - EP US); **G06F 13/26** (2013.01 - EP US); **Y02D 10/00** (2017.12 - EP US); **Y02D 30/50** (2020.08 - EP US)

Cited by
EP0977125A1; GB2388225A; GB2388225B; US6807595B2; US6202104B1; US7069367B2; WO02093391A1; WO0173531A1; WO02054260A1

Designated contracting state (EPC)
BE DE DK ES FR GB GR IE IT LU NL PT SE

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US 5765003 A 19980609; DE 69432005 D1 20030220; DE 69432005 T2 20031016; EP 0645690 A1 19950329; EP 0645690 B1 20030115; JP 4070824 B2 20080402; JP H07152584 A 19950616; US 5894577 A 19990413

DOCDB simple family (application)
US 67183196 A 19961009; DE 69432005 T 19940725; EP 94305471 A 19940725; JP 22433594 A 19940920; US 12533693 A 19930922